

TC Document

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Using New Technologies to Improve Education Resource Allocation in CID
▪ TC Number:	RG-T3888
▪ Team Leader/Members:	Elacqua, Gregory Michael (SCL/EDU) Team Leader; Biehl, Maria Loreto (SCL/EDU) Alternate Team Leader; Alvarez Marinelli, Horacio (SCL/EDU); Barragan Crespo, Enrique Ignacio (LEG/SGO); Blasco, Ivana (SCL/EDU); Emilio Laguillo (SCL/EDU); Holguin Madrinan, Alejandra (SCL/SCL); Margitic, Juan Francisco (SCL/EDU)
▪ Taxonomy:	Research and Dissemination
▪ Operation Supported by the TC:	NA
▪ Date of TC Abstract authorization:	06 Jul 2021.
▪ Beneficiary:	Ministries of Education in CID countries.
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	OC Strategic Development Program for Social Development(SOC)
▪ IDB Funding Requested:	US\$150,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	30 months
▪ Required start date:	December 2021
▪ Types of consultants:	Individual
▪ Prepared by Unit:	SCL/EDU-Education
▪ Unit of Disbursement Responsibility:	SCL/EDU-Education
▪ TC included in Country Strategy (y/n):	Y
▪ TC included in CPD (y/n):	N
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; Social inclusion and equality

II. Objective and Justification

- 2.1. The COVID-19 pandemic has brought unprecedented disruption to the global economy. Latin American and the Caribbean (LAC) had the most significant contraction compared to the rest of the world, with its economy having shrunk 7,4% in 2020. This contraction was almost double the contraction experienced by the region during the Debt Crisis of 1983. The International Monetary Fund (IMF) projects the Latin American regional economy to grow 4.6% in 2021, below the 5.8% estimated growth for emerging economies. The IMF states that income per capita will not recover its 2019 level until 2024 (Werner et al., 2021)¹. As economic activity

¹ Werner, A., Komatsuzaki, T & Pizinelli, C (2021) Short-term shot and long-term healing for Latin America and the Caribbean. International Monetary Fund Blog. Available at: <https://blogs.imf.org/2021/04/15/short-term-shot-and-long-term-healing-for-latin-america-and-the-caribbean/>

plunges and unemployment rates continue to rise, countries brace for budget shortfalls.

- 2.2. The loss of government revenues due to COVID-19 and the reallocation of resources towards healthcare-related spending will likely lead to significant cuts in funding for public education. Some estimations predict economic slowdown caused by the pandemic could lead to a decrease in education spending between 11% and 32% in the next few years (Afonso et al., 2020).
- 2.3. In addition to the recent budget cuts due to the pandemic, few education systems in LAC have considered school financing as public policy tool. This misconception has led governments to set budgets considering historically rigid rules that do not align with current needs in the region. A few exceptions, such as Brazil, Colombia, and Chile, have implemented funding formulas, which have yielded positive results.
- 2.4. Evidence from recent literature suggests that coronavirus-related budget cuts to education may have severe implications for student learning. Research has shown that changes in per-pupil spending have a causal impact on student outcomes both in the short and long term. Education spending has improved student achievement and attainment outcomes, especially for disadvantaged students (Card and Payne, 2002; Lafortune et al., 2016; Candelaria and Shores, 2019). A few studies have also found that increased funding positively impacts intergenerational mobility (Biasi, 2018) and adult outcomes such as wages and incidence of poverty (Jackson et al., 2015).
- 2.5. Governments are facing economic slowdown and increased demands for spending to cover the costs associated with the Covid-19 response. These costs include costs related to school hygiene and social-distancing provisions: new cleaning guidelines, mask and hand sanitizer provision, masks, technology related infrastructure expenses, etc. as well as costs related to adapting the workforce to remote learning: teacher training courses, the design of new learning tools, etc. All these expenses help the implementation of targeted interventions for students falling behind. This context requires governments and schools to make more efficient and equitable financial decisions to minimize the adverse effects of revenue losses. Recent research has found that publishing and using school-level expenditure data is crucial for managing educational finance more efficiently and making more informed decisions (Roza, 2018). For example, in the United States, a new provision in *Every Student Succeeds Act* calls on states and school districts to report spending by schools publicly.
- 2.6. This project seeks to gain insights on diverse financing structures in the region to inform effective solutions that will improve efficiency in resource allocation. Currently, most school systems cannot identify and track school spending and how efficiently and (in)equitably the money is distributed across schools. One exception is the state of Pernambuco. The state developed a school cost monitoring system in partnership with the IDB (through Profisco and the Technical Cooperation (BR-T1339)) to provide timely, detailed information on school expenditures and budgets.

In addition to generating transparency, it enables education managers to identify inefficiencies, such as the misallocation of teachers or waste of specific schooling inputs. For example, simulations using Pernambuco's data show that addressing schools' water waste would save R\$ 5 million per year (approximately 36% of the total annual spending for water).²

- 2.7. This Technical Cooperation (TC) aims to analyze two different resource allocation structures in two countries, Costa Rica and Panama, that focus on schooling inputs not related to teachers (such as salaries), but which manage significant amounts of funds and are currently inefficient. The work will identify the key factors that lead to the inefficient and inequitable distribution pattern in education spending and possible adjustments to improve it. The insights gained from this deep analysis will support initiatives that help governments in CID to manage their education budgets more efficiently and transparently. Eventually, the lessons from this TC will aid in the provision of technical assistance to school systems to build school-level cost information systems, which will allow policymakers, school boards, and school managers to better examine, monitor, and plan their school budgets and expenditures.
- 2.8. As mentioned, we propose to analyze the resource allocation structures from Costa Rica and Panamá. Most of the schools in Costa Rica and Panama are publicly managed. Costa Rica's public school system³ includes 5,000 public schools, while Panama's public system has 3,125. Many schools in both countries are rural and generally small schools with few students and few teachers, making it more difficult for the government to manage schools' budgets. Each country, however, presents different systems of school financing and resource allocation. In Costa Rica, a more de-centralized system, the local Parent School Boards (PSB) made up of volunteer members of the school community seize considerable decision-making power in education spending. Meanwhile, in Panama, schools directly manage only a tiny proportion of overall educational investments while Fondo de Equidad y Calidad de la Educación (FECE), part of the Ministry of Education, centrally decides over the majority of funds/ school budgets.
- 2.9. In Costa Rica, the PSBs manage more than 10% of the country's investment in education (close to 8% of GDP) fulfilling various functions, ranging from the maintenance of schools to the development of infrastructure projects, management of cafeterias, and the delivery of transportation subsidies. These complementary services seek to retain students in the classrooms, but mechanisms to organize or target their spending strategies are weak. In 2019, the 4,554 school boards received transfers for approximately US\$527,272 million per year, which is more than 10% of the total budget allocated to education in the country. Despite the relevance of the Parent School Boards and the sizable resources they manage and allocate, recent

² For additional information and analysis on Pernambuco's school cost system, see Elacqua et al., 2019: <https://publications.iadb.org/pt/em-busca-de-maior-eficiencia-e-equidade-dos-recursos-escolares-uma-analise-partir-do-gasto-por>

³ Including pre primary, primary and secondary education.

evidence suggests that most of their activities are a “black box” (*Contraloría de la República*, 2019). A survey conducted by the *Contraloría de la República* concludes that there are no clear standards for spending and no accountability mechanisms. Moreover, they find that most of the members of the PSB do not have the skills required for the tasks mandated. From their sample, they found that of the members of the PSB, only 8% of them had higher education degrees, while 39% only had primary education. Moreover, only 39% of those surveyed claimed to have received the necessary on the job training to perform their tasks. These findings naturally raise questions about how efficient these organizations are.

- 2.10. In Panama, the education sector increased its expenditure by 100% between 2011 and 2016, which has increased attendance rates. Despite this, Panama only invests 3.3% of its GDP, which is low compared to the average in Latin America (4.5% of GDP) and Costa Rica (8% of GDP). As mentioned previously, schools in Panama directly manage a tiny proportion of overall educational investments. The Ministry of Education, via FECE, administers and spends all other resources centrally. FECE oversees transferring the resources directly to the schools. However, the principals at the school administration are the ones who decide how to spend these amounts. The schools spend most of their budgets received from FECE, on infrastructure repairs and feeding programs. In 2020, FECE assigned some US\$60M out of a US\$1.8 billion budget. However, schools effectively received and spent only US\$19M. FECE is grossly under executed, since procurement policies are complex. All expenditures are audited by the National Auditing Authority.
- 2.11. This TC proposes a diagnostic study aimed at providing insights to the relationship between school finance structure and efficiency and equity in resource allocation. The work will focus in two very different spending models for non-salary resources (Parent school boards in Costa Rica and the centralized FECE model in Panama), diving deeper into how each structure impacts school resource allocation. The analysis will include an in-depth review of both the legal and regulatory framework of PSB in Costa Rica and FECE in Panama, an accompanying survey and focus groups of key stakeholders such as policymakers, parent school board members, principals, administrators, and parents, and the application of a prototype to improve each structure.
- 2.12. The goal of the diagnostic study is to inform the design of school finance policies and mechanisms that can improve efficiency of the schools in the two different systems, Costa Rica and Panama, and free up resources as well as increase coverage. Efficiency gains can effectively increase the returns to current levels of investment while prioritizing critical regions and schools for development.
- 2.13. Other TCs will complement these activities in the Education Division. IDB has developed several projects on improving the efficiency and equity of spending in Latin America (ATN/OC-15831-BR; ATN/OC-16230-RG; ATN/OC-15793-CO; CH-R1002, PE-R1002). IDB has also developed an extensive work regarding innovation and processes improvements: (i) Education Management Information System (EMIS) (ATN/OC-16379-RG) and supported states and municipalities to apply the

EMIS instrument and opportunities to improve management practices(ATN/OC-17659-BR); (ii) Open Innovation (KIC), and EDU supported education systems to identify problems which cannot or are hard to solve with regular initiatives and pilot innovations to solve those problems (ATN/OC-17659-BR); (iii) in Ecuador, Peru, Pernambuco and Rio de Janeiro, IDB designed and implemented innovative teacher and student allocation processes to improve equity and efficiency (ATN/OC-16230-RG; ATN/OC-17399-RG, ATN/OC-16910-EC, ATN/OC-16325-PE, ATN/OC-16230-RG).

2.14. This TC is consistent with the Second Update to the Institutional Strategy (UIS) 2020-2023 (AB-3190-2). It aligns strategically with the development challenge of productivity and innovation in management tools and human capital development. This TC further aligns with the operational area of technology and innovation emphasis by providing a management tool on school expenditures and strengthening the digital skills development of policymakers and principals. It is also consistent with the objectives of the Ordinary Capital Strategic Development Program for Social Development (GN-3012-3). In particular, the second objective refers to strengthening public institutions to become more effective and efficient in social programming. This TC is also aligned with the “Ordinary Capital Strategic Development Programs” OC-SPD (GN-2819-1): (i) the OC-SDP for Institutions, by contributing to make public policies and institutions more efficient, effective, open and focused on the citizen. Finally, the TC presents goals following the strategic objectives defined in the IDB Group Country Strategy with Costa Rica (2019-2022) and Panamá (2021-2024).

III. Description of Activities and Outputs

- 3.1 Component I: Analysis of the Education Financing Structures and Allocation Decisions (US\$75,000).** The goal of this component is to gather quality information to inform the development of spending monitoring tools. Specifically, it will fund: (i) an in-depth analysis of both the legal and regulatory framework of PSB in Costa Rica and FECE in Panama; (ii) a quantitative analysis using administrative data to assess the efficiency and equity in the allocation of resources in both financing structures; (iii) a survey of key stakeholders such as policymakers, parent school board members, principals, administrators, and parents to evaluate the flow of resources; and a (iv) qualitative analysis of the survey from (iii). This component will produce a detailed diagnosis of the two funding mechanisms (PSB y FECE) and a conceptual framework that integrates different information systems and databases into two tools tailored for each system specific needs’.
- 3.2 Component II: Policy Recommendations, Monitoring Tools and Dissemination (US\$75,000).** This component will provide a comprehensive set of policy recommendations to improve the design and implementation of PSB in CR and FECE in Panama. In addition, this component will implement a prototype of a cost

monitoring system of rules at the school level to be implemented in Costa Rica⁴. Both will draw from the lessons learned from Component I, but also from the experiences of Pernambuco's *Sistema de Custos* (Elacqua et al., 2018), The *Superintendencia* of Chile's school level expenditure data (Elacqua et al., 2019), and the *Snapshot of School Management Effectiveness* (Crouch, 2008). We will design the prototypes to be easily scaled up to the rest of the country and other school systems. Specifically it will fund: (I) the development of a set of policy recommendations for both Panama and Costa Rica aimed to improve the efficiency and equity of spending in PSB and FECE using information gathered in Component I; (II) the implementation of a system prototype to monitor spending for PSB in Costa Rica, and (III) the dissemination of the findings to policy makers in Costa Rica and Panama, as well as a Regional virtual seminar. The IDB will also disseminate results on the Education Regional Policy Dialogue and other sectorial events with education authorities so other countries can benefit from results

Table 1. Indicative Budget (US\$)

Activity/Component	IDB/Fund Funding	Total Funding
Component 1: Analysis of the Education Financing Structures and Allocation Decisions	75,000	75,000
Component 2: Policy Recommendations, Monitoring Tools, and Dissemination	75,000	75,000
Total	150,000	150,000

IV Agency and Execution Structure

- 3.3 The TC will be executed by the IDB. Bank execution of the TC is justified as contracting by the IDB enhances the independence of the studies, and it is in line with Appendix 10 of the Operational Guidelines for Technical Cooperation Products (GN-2629-1). The IDB has vast experience on developing interventions and policies to improve the efficiency of resource allocation in education and a dense network of individuals and organizations that specialize in improving the efficiency of spending, and participating countries request bank execution. Moreover, through its ongoing policy dialogue with the beneficiary countries, civil society organizations in Central America, the Bank is well placed to coordinate all activities financed by this TC, disseminate results and serve as the executing agency.
- 3.4 All activities to be executed under this TC have been included in the Procurement Plan (Annex IV) and will be contracted in accordance with Bank policies as follows: (a) AM-650 for Individual consultants; (b) GN-2765-4 and Guidelines OP-1155-4 for Consulting Firms for services of an intellectual nature and (c) GN-2303-28 for logistics and other related services

⁴ The prototype will be developed in coordination with the Ministries of Education and ITE Division within the IDB.

V. Project Risks and Issues

- 3.5 Not having support from school directors is a risk in these types of studies. Experiences from similar platforms in school districts in the United States and recent work in Pernambuco show that close collaboration with the government and clear communication to all stakeholders on the objectives of the school-level cost system can mitigate the risks. Therefore, to minimize this risk, the diagnostic tools will be developed in collaboration with the Costa Rican and Panamanian governments, attending to local needs.

VI. Environmental and Social Classification

- 3.6 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; hence, this TC does not have applicable requirements of the Banks Environmental and Social Policy Framework (ESPF).

Required Annexes:

[Request from the Client - RG-T3888](#)

[Results Matrix - RG-T3888](#)

[Terms of Reference - RG-T3888](#)

[Procurement Plan - RG-T3888](#)